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wherein said boundary layer has an average sintered particle size that is different from that of said solid electrolytic substrate layer and that is different from that of said insulating substrate layer.

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See the attached Appendix for the changes made to effect the above claim.

Please add new claims 9-23 as follows:

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-- 9. (New) The multilayered air-fuel ratio sensor according to claim 1, wherein the average sintered particle size of said boundary layer is larger than that of said solid electrolytic substrate layer and larger than that of said insulating substrate layer.

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10. (New) The multilayered air-fuel ratio sensor according to claim 1, wherein the composition of said boundary layer is different from the composition of said solid electrolytic substrate layer.

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11. (New) The multilayered air-fuel ratio sensor according to claim 10, wherein the composition of said boundary layer is different from the composition of said insulating substrate layer.

12. (New) A multilayered air-fuel ratio sensor having a plurality of stacked layers comprising:

a plurality of substrate layers comprising at least one solid electrolytic substrate layer and at least one insulating substrate layer; and

a boundary layer interposed between said solid electrolytic substrate layer and said insulating substrate layer;

wherein said boundary layer has an average sintered particle size that is larger than that of said solid electrolytic substrate layer and that is different from that of said insulating substrate layer.

13. (New) The multilayered air-fuel ratio sensor according to claim 12, wherein said boundary layer has a porosity that is larger than that of said substrate layers.

14. (New) The multilayered air-fuel ratio sensor according to claim 12, wherein said boundary layer comprises a component selected from the group consisting of alumina, spinel, and steatite.

15. (New) The multilayered air-fuel ratio sensor according to claim 12, wherein said boundary layer has a thickness that is in the range of 10 to 100  $\mu$ .

16. (New) The multilayered air-fuel ratio sensor according to claim 12, wherein said substrate layers comprise a plurality of solid electrolytic substrate layers, and said boundary layer is interposed immediately between two consecutive solid electrolytic substrate layers without any other intervening layer.

17. (New) The multilayered air-fuel ratio sensor according to claim 12, wherein the average sintered particle size of said boundary layer is larger than that of said insulating substrate layer.

18. (New) A multilayered air-fuel ratio sensor having a plurality of stacked layers comprising:

a plurality of substrate layers comprising at least one solid electrolytic substrate layer and at least one insulating substrate layer; and

a boundary layer interposed between said solid electrolytic substrate layer and said insulating substrate layer;

wherein said boundary layer has an average sintered particle size that is larger than that of said solid electrolytic substrate layer and that is different from that of said insulating substrate layer and wherein the composition of said boundary layer is different from the composition of said solid electrolytic substrate layer.

19. (New) The multilayered air-fuel ratio sensor according to claim 18, wherein said boundary layer has a porosity that is larger than that of said substrate layers.

20. (New) The multilayered air-fuel ratio sensor according to claim 18, wherein said boundary layer comprises a component selected from the group consisting of alumina, spinel, and steatite.

21. (New) The multilayered air-fuel ratio sensor according to claim 18, wherein said boundary layer has a thickness that is in the range of 10 to 100  $\mu$ .

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22. (New) The multilayered air-fuel ratio sensor according to claim 18, wherein said substrate layers comprise a plurality of solid electrolytic substrate layers, and said boundary layer is interposed immediately between two consecutive solid electrolytic substrate layers without any other intervening layer.

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23. (New) The multilayered air-fuel ratio sensor according to claim 18, wherein the average sintered particle size of said boundary layer is larger than that of said insulating substrate layer. --